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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,848	08/21/2003	Shou-Te Yu	YUSH3006/EM	6155
23364	7590	04/04/2006	EXAMINER	
BACON & THOMAS, PLLC			BELT, SAMUEL E	
625 SLATERS LANE				
FOURTH FLOOR			ART UNIT	PAPER NUMBER
ALEXANDRIA, VA 22314				3746

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/644,848	YU, SHOU-TE	
	<b>Examiner</b>	<b>Art Unit</b>	
	Samuel E. Belt	3746	

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 28 February 2006.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-5 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-5 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
    Paper No(s)/Mail Date \_\_\_\_\_.

4) Interview Summary (PTO-413)  
    Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

This action is in response to applicant's amendment received on 02/28/2006.

### ***Claim Objections***

Claim 1 is objected to because of the following informalities:

- Claims may only be written as a single sentence, please refer to line 5 of claim 1.
- In claim 1, 3<sup>rd</sup> line from the end, "toward" should be deleted. Note, applicant has crossed out the same term in claim 4.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the

invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, & 4-5 rejected under 35 U.S.C. 102(b) as being anticipated by Wilson (U.S. Patent 2,320,207) as shown in Figure 2.

Wilson discloses a unit heater comprising: a radiator having a plurality of radiation fins (34); and a fan connected to a top of said radiator (24) and including a frame (column 2, lines 5+) and a plurality of blades mounted in said frame (24); said frame having a triangular cross section (Not labeled; However, clearly seen in Fig. 2), so that said blades are mounted in said frame at an inclined position relative to the top of said radiator such that when said fan operates, said fan creates an air flow directed against side surfaces of said plurality of radiation fins; wherein said fan is connected to the top of said radiator by means of fastening elements (Not labeled; However, clearly seen in Figure 2).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2, & 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu (US Patent No. 5835347) in view of Wiley (US Patent No. 6512673).

In regard to Claims 1 and 2, as shown in Figure 1, Chu discloses a cooling fan comprising: a radiator (16), having a plurality of radiation fins (22); a fastening element (28, 34); a fan connected to a top of said radiator and including a frame and a plurality of blades mounted in said frame (32).

Although Chu discloses a cooling fan, Chu fails to teach a frame having a triangular cross section, so that said blades are mounted in said frame at an inclined position relative to the top of said radiator.

Wiley teaches a fan (Fig. 4, item 10), comprising a frame and a plurality of blades mounted in said frame that has a triangular cross section, and is capable of mounting said blades at an inclined position relative to the top of said radiator (Column 5 lines 16 – 24). This configuration is useful to channel airflow to specified areas where there is heat generation. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Chu device by replacing the frame with a triangular frame having blades therein as taught by Wiley in order to provide a more efficient way of transferring heat away from a heat source.

(**Note:** It is being interpreted that the airflow generated by the fan as taught by Wiley would inherently direct some airflow against the side of a radiation fin. It is also shown in embodiment 5 of Wiley, that the cooling component can be moved so as to direct its airflow onto other heat generating areas (column 5, lines 15+).)

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chu (US Patent No. 5835347) in view of Wiley (US Patent No. 6512673) as applied above and further in view of Shen (US Patent No. 5495392).

Chu and Wiley disclose the aspects of the claimed apparatus as explained above including a fan frame with two slide ways provided at the lower ends (not numbered; however, clearly seen in Fig. 1); a radiator that is provided at upper ends of two outmost ones of said radiation fins with two projected rails corresponding to said slide ways on fan frame, so that said fan is connected to the top of said radiator through engagement of said slide ways with said rails (28, 34).

Although Chu and Wiley disclose a cooling fan, Chu and Wiley fail to teach the fan frame slide ways being provided at outer sides of lower ends and the radiators projected rails being projected inward.

Shen teaches a fastening element which is comprised of a cooling fan with a frame that is provided at the outer sides of the two lower ends with slide ways (not numbered; however, clearly seen in Fig. 1). And a radiator which is provided at upper ends of two outmost ones of said radiation fins with two inward projected rails that correspond to said slide ways (not numbered; however, clearly seen in Fig. 1). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Chu in view of Wiley device by replacing the fastening element with the fastening element as taught by Shen because the geometry of the fasteners are just reversals of one another and are functional equivalents.

***Response to Arguments***

Applicant's remarks have been fully considered but they are not deemed persuasive.

Applicant argues that the references do not teach the airflow being directed against the side surfaces of the radiation fins. The fan would inherently direct some airflow against the side surfaces of the radiation fins, thereby performing the same function of the claimed apparatus.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel E. Belt whose telephone number is (571) 272-7820. The examiner can normally be reached on M-F, 8 - 4:30EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Thorpe can be reached on (571) 272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SEB

  
TAE JUN KIM  
PRIMARY EXAMINER

  
Samuel E. Belt  
03/28/2006